Utah Department of Health

SEVERE ACUTE RESPIRATORY SYNDROME (SARS)
CLINICIAN UPDATE
April 17, 2003

SUMMARY:

1. Clinicians need to remain vigilant in detecting new cases of SARS.
2. Healthcare-associated transmission has usually been associated with breaches in respiratory protection
3. Any healthcare worker that develops pneumonia should notify public health immediately
4. Please continue to report any suspect cases IMMEDIATELY to your local health department or to UDOH 24/7 number (888) EPI-UTAH (374-8824). Public Health is notifying all cases and contacts to help assure appropriate steps are taken to minimize risk of transmission to others.
5. Check the Medical Guidelines (present on the www.health.utah.gov/sars/ web site) for full information on diagnosis, specimen collection, test result interpretation, and infection control measures.

RECENT INFORMATION:

Causative Agent:

The WHO has announced that the coronavirus fulfills Koch's Postulates and is the causative agent of SARS. The coronavirus alone was able to produce SARS-like symptoms in monkeys, strongly implicating it as the pathogen. The agent has been sequenced and nucleic acid-based diagnostic tests should be more widely available shortly. The virus is single-stranded RNA approximately 29K bases.

Metapneumovirus (a form of paramyxovirus) was found in a few cases along with the coronavirus, but it was not present in most of the SARS cases.

Several of the Toronto cases had co-infections with other organisms. Therefore, the presence of other viruses or bacteria would not, by itself, be a reason to exclude the SARS diagnosis.

Disease Importance (from WHO):

SARS needs to be regarded as a particularly serious threat for several reasons. With the notable exception of AIDS, most new diseases that emerged during the last two decades of the previous century or established endemicity in new geographical areas have features that limit their capacity to pose a major threat to international public health.

1. Many (avian influenza, Nipah virus, Hendra virus, Haanta virus) failed to establish efficient human-to-human transmission.
2. Others (Escherichia coli O157:H7, variant Creutzfeldt-Jakob disease) depend on food as a vehicle of transmission.
3. Diseases such as West Nile Fever and Rift Valley Fever that have spread to new geographical areas require a vector as part of the transmission cycle and are associated with low mortality, primarily affects high-risk groups, such as the elderly, the immunocompromised, or persons with co-morbidity.
4. Still others (Neisseria meningitidis W135, and the Ebola, Marburg, and Crimean-Congo haemorrhagic fevers) have strong geographical foc. Although outbreaks of Ebola haemorrhagic fever have been associated with case-fatality rates in the range of 53% (Uganda) to 88% (Democratic Republic of the Congo), person-to-person transmission requires close physical exposure to infected blood and other bodily fluids. Moreover, patients suffering from this disease during the period of high infectivity are visibly very ill and too unwell to travel.

In contrast, SARS is emerging in ways that suggest great potential for rapid international spread under the favorable conditions created by a highly mobile, closely interconnected world. Anecdotal data indicate an incubation period of 2 to 10 days (usually 2 to 7 days), allowing the infectious agent to be transported, from one city in the world to any other city having an international airport. Person-to-person transmission through close contact with respiratory secretions has been demonstrated. The initial symptoms are non-specific and common. The concentration of cases in previously healthy hospital staff and the proportion of patients requiring intensive care are particularly alarming.

SUPERSPREADERS:
A few patients are being dubbed “super-spreaders” as they appear to be capable of enhanced disease dissemination. There are no available data that would indicate why some people are super-spreaders and others are not. There has not been any community transmission documented in the U.S., and no deaths have occurred in U.S. patients.

HEALTHCARE WORKER SURVEILLANCE:
There has been no evidence of community-transmission of SARS in the US to date. The current SARS case definition would not include people who become ill with no known contact with a SARS patient or travel to a SARS area. If such transmission occurred, it is likely that patients would end up in hospitals and would potentially lead to cases among health care workers. As a safeguard to detect such transmission, CDC and the UDOH are requesting that <u>healthcare workers who have a pneumonia-like syndrome with an abnormal chest X-ray contact public health immediately.</u>

CURRENT DATA:
As of today, the CDC is reporting 199 suspected SARS cases (5 from Utah have met the case definition). Utah is investigating additional cases that may meet the revised case definition. There have been 3,293 cases reported worldwide,

with 159 reported deaths (4.8% fatality rate). Virtually all US cases have occurred in travelers returning from China, Hong Kong, Vietnam, or Singapore.

The WHO case definition is more selective (requiring evidence of pneumonia, rather than just cough or other upper respiratory symptoms) than the US case definition. Only 32 of the 199 suspect US cases would meet the WHO criteria. Of those 32, 8 have had full diagnostic testing performed and 5 of the 8 demonstrate evidence of coronavirus.

CDC will be revising their case definitions shortly.

The question of transmission through blood donation is unknown. However, CDC is developing questions for blood donation centers to use in their screening process. These should be made available shortly.

TRAVEL ADVISORY:
The U.S. Department of State recommends that American citizens defer all non-emergency travel to Vietnam and mainland China.

The World Health Organization (WHO) is advising that people traveling to Hong Kong or Guangdong Province China consider postponing all but essential travel.

The Centers for Disease Control (CDC) advises postponing nonessential travel to mainland China, Hong Kong, Hanoi, Vietnam, or Singapore until further notice.

Links:
CDC web site (www.cdc.gov/ncidod/SARS)
WHO web site (www.who.int)
CDC infection control guidelines (http://www.cdc.gov/ncidod/sars/ic.htm)